gene regulation in higher organisms. The papers are refreshing for their lack of emphasis on the role of circulating regulators and histones in this regulation. Although there are momentary lapses into studies on protokaryotes, the strength in this volume is unqualifiedly with the eukaryotes. This should give pleasure to all frustrated biologists who have attended symposia and bought volumes with titles involving the words "nuclei" and "differentiation" only to discover that they dealt primarily with phage and bacteria.

The book is divided into seven sections, within which papers have more or less cohesion. This book is not a comprehensive account of nuclear "physiology and differentiation" suitable for biology students but rather a group of generally provocative research accounts with a few brief reviews. It will be most useful for researchers intimately concerned with more recent advances in this area of cell biology.

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Summary of Immunology

Antibodies and Immunity. G. J. V. NOSSAL. Basic Books, New York, 1969. x + 238 pp., illus. $5.95.

Antibodies and Immunity is a discussion of the history and particularly the current state of the field of immunology, written by an immunologist for the lay audience. Nossal has succeeded in his task admirably well, presenting his case clearly and fluidly and rendering a view of the field that is comprehensive and exciting. The book is timely, for academic interest in the biology of the immune response is finally appearing outside of the medical school, and because of the impact of organ transplantation there has been much popular discussion of the subject.

Nossal is comprehensive in his coverage. The emphasis is on the cell and organ systems involved in the immune response. The book necessarily contains a great deal of descriptive material, but Nossal holds the reader's attention and interest by combining an account of the historical development of a concept with the modern experimental analysis of it. The book should give a reader with little or no background in the subject a basic knowledge of the structure of antigens and antibodies, and of the concepts of antigenicity and immunogenicity. The cellular systems involved in the initiation and progression of the immune response and immune memory are discussed in detail. The introduction to immune tolerance and the discussion of its implications for development and for tissue transplantation are lucid. The reader is introduced to "cellular" immunity and is brought into the controversy regarding theories of antibody formation. Finally, with this background, he is led in the last chapters into allergy and hypersensitivity, organ transplantation, and cancer and irradiation research. Clinical implications of the subject, however, are discussed throughout. The book will thus serve two audiences well: the person interested primarily in clinical developments, as well as the beginning science student interested from a more academic point of view.

To say that the book is clear is not to say that it will be easy going for the lay reader. Nossal does not choose to simplify by presenting only the well-understood or simple aspects of the field. For example, at one point he introduces the concept of "allogeneic inhibition," and later he uses it in a discussion of tumor progression. These are meaty ideas even for the immunologist to grasp, let alone the layman.

Especially for the more serious student it is unfortunate that more attention is not paid to the molecular biology of immunity. Immunogenetics is not mentioned, and the entire discussion of the impact of immunoglobulin sequence studies, which for the last decade has amounted to what can only be considered a revolution in the field, takes up less than two pages. Nossal argues that all of this is too much in a state of flux to permit the expression of meaningful views (a consideration which does not inhibit him in other areas), and elsewhere that the "vast bulk of observable events . . . are as yet too multifactoral to yield to a precise chemical approach" (p. 231). This defense must be considered weak, for it is equally valid for the biochemist to argue that, although the system he is studying is indeed complex, his questions are directed at an aspect of it which can yield precise information and which may or may not as yet be relevant to what goes on at another level. Nossal's views can only serve to maintain or increase the gap existing between investigators studying at different levels of biological organization.

The book does have an extensive index, but would be much improved for the student if it were referenced, or at least included a list of suggested readings. This is particularly true because of the general ignorance of the field which still prevails in most life science departments in our colleges and universities.

A final important aspect of the book is that Nossal is not reluctant to express views on other than the scientific aspects of the study of immunity. This is to be praised, for, though Nossal argues that scientists have the ear of the public and of those in political power, opportunities to discuss the broader implications of research are all too infrequent and are all too often not realized.

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Vectors and Diseases

The Biology of Mosquito-Borne Disease. P. F. MATTINGLY. Allen and Unwin, London, and Elsevier, New York, 1969. 184 pp. + plates. $6.50. Science of Biology Series, No. 1.

This book was written by a man whose interests have expanded from those of a museum taxonomist to conditions in the field. The author has traveled to many parts of the world and has based this book on activities he has seen. The subject matter is largely the ecology of vertebrate pathogens that cycle through mosquitoes, mostly in tropical situations. The book is divided into 13 chapters on subjects ranging from diseases as ecological systems, to bionomics of human pathogens and associated mosquitoes, to complications in populations of mosquitoes. It consists of thumbnail sketches of chosen examples, and because of its brevity leaves much to be desired for persons away from large libraries. The author skips about through the parasitic relations in a manner that is informative but not burdensome to the casual observer in biology, and because it consists of bits and pieces interestingly presented the book has a useful place in making biology more understandable to the lay public.

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